

1 **I. RATE DIFFERENTIALS**

2 **Q. HOW DO YOU RESPOND TO MR. O'DONNELL'S TESTIMONY**
3 **RELATED TO SCE&G'S CURRENT RATES?**

4 A. SCE&G takes its responsibility to control costs very seriously. The
5 Company's customers should have access to electric power that is safe,
6 reliable, efficient and reasonably-priced. Achieving this goal requires
7 SCE&G to balance cost control in the short term with the investments that
8 the Company must make in the infrastructure, people and systems
9 necessary to provide reliable and efficient electric service over the long-
10 term. Balancing those competing interests is never easy, but the Company
11 is doing this effectively. SCE&G is operating its system efficiently from a
12 cost, and reliability standpoint and is making reasonable, prudent and
13 necessary investments to ensure that future operations will also be efficient
14 and reliable.

15 **Q. WHAT DOES MR. O'DONNELL SUGGEST THE PUBLIC**
16 **SERVICE COMMISSION OF SOUTH CAROLINA**
17 **("COMMISSION") SHOULD DO CONCERNING THE RATE**
18 **DIFFERENTIALS HE POINTS OUT?**

19 A. Mr. O'Donnell does not make any recommendation related to these
20 rate differentials other than to suggest that the Commission should be alert
21 to them and seek to ensure that they do not interfere with industrial

1 competitiveness in South Carolina. SCE&G is fully supportive of the need
2 to ensure that South Carolina retains its industrial competitiveness. As
3 discussed in my direct testimony, SCE&G believes that South Carolina is
4 achieving success in attracting new and expanded manufacturing
5 investments. SCE&G further believes that the decisions it has made to
6 invest in efficient base load, intermediate and new nuclear generation
7 resources will be a strong factor supporting the industrial competitiveness
8 of the state in future years.

9 **Q. ARE THERE LIMITS TO THE ACCURACY AND USEFULNESS**
10 **OF THE SORTS OF RATE COMPARISONS MR. O'DONNELL**
11 **MAKES?**

12 A. Yes. There are limitations on the usefulness of such comparisons.
13 Each utility has a different service area and customer base. Each utility has
14 legacy generation, transmission and distribution systems that are unique to
15 that utility alone. Utilities have different load factors, and proportions of
16 wholesale, industrial and commercial load. There are differences among
17 utilities in the climates of their service territories and in the geographic
18 concentration or dispersion of their customers and load centers. All these
19 factors affect the cost to serve customers and therefore affect rates. For
20 reasons such as these, variations in rates are to be expected between utilities
21 and are commonplace.

1 **Q. WHAT THEN IS THE CAUSE OF THE RATE DIFFERENTIALS**
2 **THAT MR. O'DONNELL DISCUSSES?**

3 A. There are as many factors driving these rate comparisons as there are
4 factors driving rates. However, there are two principal drivers that would
5 explain most, if not all, of the rate differentials Mr. O'Donnell discusses.
6 They are the nature of SCE&G's generation mix and the current level of
7 SCE&G's investment in generation and transmission and distribution
8 assets.

9 **Q. PLEASE EXPLAIN HOW GENERATION MIX INFLUENCES**
10 **THESE DIFFERENTIALS.**

11 A. Fuel costs are determined by the composition of a utility's
12 generation fleet and the other electric supply resources that are available to
13 it. From a fuel standpoint, the lowest cost generation available today is
14 nuclear generation. The fuel cost for nuclear generation is less than one-
15 cent per kilowatt hour ("kWh"). This compares to approximately four and
16 one-half cents per kWh for coal fired generation, and slightly less than three
17 cents per kWh for combined cycle natural gas-fired generation. In short, in
18 2011 the fuel cost differential between coal and nuclear was approximately
19 400% and between gas and nuclear was over 200%.

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1 **Q. HOW DOES SCE&G’S GENERATION MIX COMPARE TO THAT**
2 **OF ITS NEIGHBORING INVESTOR-OWNED UTILITIES?**

3 A. There are 12 nuclear generation units that are operated by the three
4 major investor-owned electric utilities that serve customers in South
5 Carolina, which I collectively refer to as the “South Carolina utilities.”
6 SCE&G operates only one of those 12 nuclear units, and it does so in
7 partnership with the South Carolina Public Service Authority also known as
8 “Santee Cooper.” In 2011, SCE&G’s customers received only about 10%
9 of the nuclear power generated by the South Carolina utilities. In that year,
10 the percentage of nuclear energy used on SCE&G’s system was the lowest
11 of any of the South Carolina utilities, slightly less than 20%. The highest
12 was Duke Energy Carolinas’ whose percentage of nuclear generation was
13 52%, or approximately two and one-half times that of SCE&G. Progress
14 Carolinas’ share was 46%, which is also more than twice that of
15 SCE&G’s. This difference in generation mix creates a significant fuel cost
16 difference among utilities operating in this area.

1 **Q. YOU MENTIONED THAT SCE&G’S LEVEL OF INVESTMENT IN**
2 **GENERATION, TRANSMISSION AND DISTRIBUTION**
3 **CONTRIBUTES TO THE RATE DIFFERENTIAL MR.**
4 **O’DONNELL DISCUSSES. HOW DOES SCE&G’S INVESTMENT**
5 **IN UTILITY PLANTS COMPARE TO THAT OF ITS**
6 **NEIGHBORING INVESTOR-OWNED UTILITIES?**

7 A. Over the past 25 years, SCE&G has been required to invest
8 significant amounts of capital in new base load and intermediate generating
9 capacity and associated transmission. These investments were not optional,
10 but were necessary to serve growing customer demands in a reliable and
11 economically efficient way. Until relatively recently, the other investor-
12 owned electric utilities serving customers in South Carolina have not been
13 required to make similar investments.

14 **Q. PLEASE EXPLAIN.**

15 A. In the 23 years between 1987, when the Shearon Harris Nuclear
16 Plant was completed, and 2011, when combined cycle gas units went into
17 service at the Smith and Buck sites in North Carolina, the publicly reported
18 data (current IRP data) indicates that South Carolina utilities added a total
19 of approximately 2,212 megawatts (“MW”) of new base load and
20 intermediate capacity plants to their systems. Of this amount, 79% was
21 added by SCE&G. The total cost of the investment was approximately \$1.5
22 billion. Of this investment, approximately \$1.3 billion was made by

1 SCE&G. In addition, SCE&G invested approximately \$90 million in
2 transmission associated with these projects.

3 **Q. WHAT ARE THE PROJECTS THAT REPRESENT THE**
4 **INVESTMENT BY SCE&G?**

5 A. The projects SCE&G built during this period are the 415 MW Cope
6 Station coal fired plant (1996), the 458 MW Urquhart Station combined
7 cycle repowering (2002), and the 869 MW Jasper Station combined cycle
8 plant (2004). Collectively these projects represent 31% of SCE&G's
9 current generation resources on a capacity basis.

10 **Q. DOES THE \$1.3 BILLION INCLUDE SCE&G'S INVESTMENT IN**
11 **THE NEW NUCLEAR PROJECT?**

12 A. No, the \$1.3 billion does not reflect SCE&G's investment in the new
13 nuclear units which began in 2008. Recovery of the financing cost of the
14 units, however, was reflected in the rates underlying Mr. O'Donnell's
15 comparison. The rates which Mr. O'Donnell references reflect recovery of
16 financing costs on construction balances through June 30, 2011, of
17 approximately \$1.1 billion. This \$1.1 billion is in addition to the \$1.3
18 billion invested between 1987 and 2010 in new capacity.

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1 **Q. DID THE COMMISSION REVIEW AND APPROVE THE**
2 **PRUDENCE AND NECESSITY OF SCE&G'S INVESTMENT IN**
3 **THE THREE SCE&G GENERATION PROJECTS MENTIONED**
4 **ABOVE?**

5 A. Yes. As to each of the three SCE&G projects, the Commission
6 found that the public necessity and convenience supported the project. It
7 did so after fully contested case hearings. In each case, SCE&G showed
8 that it could not maintain a reasonable reserve margin and continue to
9 operate its system efficiently without the additional generation resources
10 requested. In each case, as required by the Utility Facility Siting and
11 Environmental Protection Act, SCE&G also demonstrated that the
12 particular project in question was the best approach for meeting customers'
13 needs and supported system economy. The prudence of each of the three
14 projects was then subject to review in the post-construction rate
15 proceedings where the costs of the units were first reflected in rates. The
16 operational and economic necessity of each of these projects was clearly
17 established in those proceedings.¹

¹ The siting and subsequent rate adjustments related to the these projects were approved by the Commission in the following orders: (1) the siting of Cope Station was approved by the Commission in Order No. 92-275 and the related rate adjustments were approved in Order No. 93-465 and Order No. 96-15; (2) the siting of Urquhart Station was approved by the Commission in Order No. 2000-544 and the related rate adjustment was approved in Order No. 2003-38; and (3) the siting of Jasper Station was approved by the Commission in Order No. 2002-19 and the related rate adjustments were approved in Order No. 2003-38 and Order No. 2005-2.

1 **Q. WHY WAS IT NECESSARY FOR SCE&G TO INVEST \$1.3**
2 **BILLION IN NEW BASE LOAD AND INTERMEDIATE CAPACITY**
3 **AT A TIME WHEN OTHER UTILITIES WERE NOT MAKING**
4 **SUCH INVESTMENTS?**

5 A. The reason is largely historical. Most of the dispatchable coal and
6 nuclear generation operated by South Carolina utilities was built during the
7 construction cycle that started in the late-1960s and ended abruptly in the
8 early 1970s. (Some units that were begun during this cycle, like Shearon
9 Harris, were not completed until the mid-1980s well after economic
10 conditions had forced an end to the construction cycle.)

11 The 1960s was a period when electric demand was increasing
12 rapidly in this area. In 1965 for example, investor-owned electric utilities
13 serving customers in South Carolina reported annual growth rates in
14 electric consumption that exceeded 10%. In response, all of the investor-
15 owned utilities in this area undertook major construction programs to add
16 base load generation to their systems.

17 The utilities which undertook the largest construction programs
18 during this period entered the mid-1980s with a great deal of reserve base
19 load capacity, especially nuclear capacity. This level of reserve capacity
20 resulted from the projects that were under construction when load growth
21 plummeted in the early 1970s due to changed economic conditions.

1 **Q. CAN YOU DESCRIBE SCE&G’S CONSTRUCTION PROGRAM**
2 **DURING THIS PERIOD?**

3 A. According to the reported data, investor-owned electric utilities
4 serving customers in South Carolina built 17 major base load or
5 intermediate generating plants during this period. Of these 17 plants,
6 SCE&G built only three: the Williams, Wateree and V.C. Summer plants.
7 The total amount of capacity from major base load or intermediate
8 generating units added during this period was approximately 20,000 MW.
9 Of this amount, SCE&G added 1,933 MW, or less than 10%. For that
10 reason, SCE&G emerged from this construction cycle with a relatively
11 small capacity overhang.

12 **Q. WHY DID SCE&G’S CONSTRUCTION PROGRAM LAG BEHIND**
13 **ITS PEERS?**

14 A. Part of the reason would be related to development patterns during
15 the 1960s and 1970s. The I-85 Corridor in the Greenville/Spartanburg area,
16 the Charlotte metropolitan area, and the Raleigh/Durham and Greensboro
17 areas all saw intensive development during this period. That development
18 began earlier than the development that occurred in the areas of South
19 Carolina where SCE&G serves.

20 In recent years, a principal driver for electric demand growth for
21 SCE&G has been coastal development in the Charleston/Beaufort area.
22 The growth in this area began to be a factor in the 1980s and 1990s. Before

1 that time, development in this area was not as strong a contributor to
2 electric demand growth as was growth in the I-85 Corridor, the Charlotte
3 metropolitan area, and the Raleigh/Durham and Greensboro areas.
4 Industrialization there did not reach the levels in the other areas mentioned.
5 As a result, SCE&G did not need as large a construction program in the
6 1960s-1980s as did other South Carolina utilities.

7 **Q. DO THESE DEVELOPMENT PATTERNS ALSO DRIVE RATE**
8 **DIFFERENTIALS MORE DIRECTLY?**

9 A. Yes, they do. Another outcome of these development patterns is that
10 the other utilities have higher concentrations of load in large parts of their
11 service territories. The concentration of electric demand in highly
12 developed areas like the I-85 Corridor, the Charlotte metropolitan area, and
13 the Raleigh/Durham and Greensboro areas creates efficiencies of service,
14 and reduces the transmission and distribution infrastructure and
15 maintenance required per customer. SCE&G does not serve any areas that
16 are as highly developed as the I-85 Corridor, the Charlotte metropolitan
17 area, or the Raleigh/Durham and Greensboro areas. The lower proportion
18 of highly concentrated load centers in SCE&G's territory explains part of
19 the rate differentials between the South Carolina utilities.

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1 **Q. RETURNING TO THE CONSTRUCTION PROGRAM THAT**
2 **ENDED IN THE 1970s, WHAT WAS THE RESULT FOR SCE&G**
3 **WHEN THAT CONSTRUCTION CYCLE ENDED?**

4 A. During the late 1980s and into the 1990s, SCE&G had the lowest
5 electric rates of the three major investor owned utilities operating in South
6 Carolina. However, SCE&G was also the first investor-owned electric
7 utility serving customers in South Carolina to exhaust its supply of reserve
8 capacity that had been built during the prior construction cycle. This meant
9 that SCE&G was the first of these utilities to be required to build new base
10 load or intermediate load generation. This happened when SCE&G built the
11 Cope Generating Station in the early 1990s.

12 **Q. WHAT HAPPENED TO OTHER UTILITIES WHICH BUILT**
13 **MORE NUCLEAR AND OTHER BASE LOAD CAPACITY THAN**
14 **SCE&G IN THE PRIOR PERIOD?**

15 A. From the 1980s on, these utilities were left with a great deal of
16 highly efficient base load capacity that they carried on their books at 1960s,
17 1970s and 1980s construction prices. Today, the cost of that capacity for
18 rate base purposes has been further reduced by decades of depreciation.

19 **Q. HOW VALUABLE TODAY IS THE NUCLEAR CAPACITY BUILT**
20 **DURING THIS PERIOD?**

21 A. The now highly depreciated nuclear capacity built during this period
22 has proven to be extremely valuable as fuel costs for coal generation have

1 increased by approximately 260% since 2000 and the environmental
2 compliance costs of coal units have become extraordinarily high. As
3 mentioned above, today, Duke Energy Carolinas generates 52% of its
4 power from nuclear plants built from the 1960s through the 1980s.

5 **Q. CAN YOU PROVIDE CONCRETE EXAMPLES OF THE CAPITAL**
6 **COSTS OF CAPACITY BUILT DURING THIS PERIOD?**

7 A. SCE&G does not have access to the depreciated value of other
8 utilities' plants. However, we do know the net book value for our plants.
9 In 2011, the net book value of the Wateree Station, Williams Station and
10 V.C. Summer Nuclear Station No. 1 was \$851, \$808 and \$757 per kilowatt
11 ("kW") respectively. These values are the values that are used in
12 computing the rates SCE&G charges customers for power generated by
13 these plants. These values compare to current estimates of the cost of new
14 coal generation (assuming that it could be built under present carbon
15 restrictions) of \$2,800 per kW (2010 dollars). The current cost of nuclear,
16 as reflected in the project to complete the V. C. Summer Units, 2 & 3, is on
17 the order of \$4,800 per kW. In short, the capital cost of older, highly-
18 depreciated generating units is much less than new construction.

19 **Q. WHAT DOES YOUR ANALYSIS OF MR. O'DONNELL'S RATE**
20 **COMPARISON SHOW?**

21 A. My analysis shows that there are valid reasons largely related to
22 development patterns, geography, and legacy generation systems that

1 explain the rate differentials that Mr. O'Donnell points out. SCE&G has
2 strong controls in place to monitor costs. The Company operates its
3 electric system efficiently and reliably. The rate differentials Mr.
4 O'Donnell points out are based on the nature and history of our service
5 territory.

6 **WHOLESALE POWER CONTRACT**

7 **Q. HOW DO YOU RESPOND TO MR. O'DONNELL'S SUGGESTION**
8 **THAT THE COMMISSION SHOULD NOT GRANT THE FULL**
9 **AMOUNT OF THE PRO FORMA REDUCTION TO REVENUE**
10 **RELATED TO THE EXPIRATION OF THE 250 MW WHOLESALE**
11 **CONTRACT?**

12 A. In the application in this matter, SCE&G indicated that the 250 MW
13 wholesale contract that it entered into when the Jasper Generating Station
14 entered service will expire on December 31, 2012. As a result, in 2013
15 SCE&G will not receive approximately \$30 million in revenue that the
16 Company received under this contract during the test period. The
17 expiration of this contract is a known and measurable change in the
18 revenues of the Company and should be reflected in rates. Mr. O'Donnell
19 does not provide the Commission with any basis to rule otherwise.

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1 **Q. HAS SCE&G PRESENTED THIS CONTRACT TO THE**
2 **COMMISSION?**

3 A. Yes, in Docket No. 2001-420-E, SCE&G came before the
4 Commission under the Utility Facility Siting and Environmental Protection
5 Act to seek approval to construct the Jasper Generating Station. In that
6 proceeding, the Company explained that SCE&G could achieve a lower
7 per-MW price for the plant by building a three-unit 869 MW plant, rather
8 than a lower-capacity two-unit plant. To defray the cost of the additional
9 capacity, and subject to Commission approval of the siting of the Jasper
10 Generating Station, SCE&G had entered into a nine-year 250 MW sale to a
11 wholesale customer. As explained to the Commission at the time, the
12 contract was anticipated to expire when SCE&G would need the additional
13 capacity to serve its customers.

14 **Q. HAS THERE BEEN ANY CHANGE IN THIS PLAN?**

15 A. No, there has not been any change in this plan. The contract will
16 expire as envisioned. At that time, the 250 MW of capacity represented by
17 this contract will be needed on a long-term basis to support the retirement
18 of coal-fired generation that cannot be retrofitted with environmental
19 upgrades on a cost effective basis. The 250 MW will also be needed on a
20 long-term basis to meet the requirements of the system as they have grown
21 over the past nine years. As indicated in SCE&G's 2012 Integrated
22 Resource Plan, after expiration of the contract, SCE&G's reserve margin in

1 2013 will be within or slightly below SCE&G's established target reserve
2 for the entire planning period. As anticipated in 2001, SCE&G needs the
3 capacity represented by the expiration of this contract to serve its
4 customers.

5 **Q. DOES THIS CONCLUDE YOUR REBUTTAL TESTIMONY?**

6 A. Yes, it does.